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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/785,486	02/20/2001	Shinji Takeda	TM&K0008	9092

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EXAMINER	
GRAYBILL, DAVID E	

ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 10/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/785,486	SHINJI TAKEDA	
	Examiner	Art Unit	
	David E Graybill	2827	

-- Th MAILING DATE of this communication app ars on the cover sheet with the correspond nce addr ss --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 July 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-19,21-34 and 37-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-19,21-34 and 37-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 February 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *Requirement for information* .

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the details of claims 47-50 must be shown or the features canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 17-19, 21-34 and 37-50 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The undescribed subject matter of the claimed invention is the entirety of the claims.

To determine adequacy of written description MPEP 2163IIA2(a) (redacted) instructs:

> (i) For Each Claim Drawn to a Single Embodiment Or Species:
> (A) Determine whether the application describes an actual reduction to practice of the claimed invention.
> (B) If the application does not describe an actual reduction to practice, determine whether the invention is complete as evidenced by a reduction to drawings or structural chemical formulas that are sufficiently detailed to show that applicant was in possession of the claimed invention as a whole.
> (C) If the application does not describe an actual reduction to practice or reduction to drawings or structural chemical formula as discussed above, determine whether the invention has been set forth in terms of distinguishing identifying characteristics as evidenced by other descriptions of the invention that are sufficiently detailed to show that applicant was in possession of the claimed invention.
> (1) Determine whether the application as filed describes the complete structure (or acts of a process) of the claimed invention as a whole.
> (2) If the application as filed does not disclose the complete structure (or acts of a process) of the claimed invention as a whole, determine whether the specification discloses other relevant identifying characteristics sufficient to describe the claimed invention in such full, clear, concise, and exact terms that a skilled artisan would recognize applicant was in possession of the claimed invention. Any claim to a species that does not meet the test described under at least one of (a), (b), or (c) must be rejected as lacking adequate written description under 35 U.S.C. 112, para. 1.
> ii) For each claim drawn to a genus:
> **The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice (see i)(A), above), reduction to drawings (see i)(B), above), or by disclosure of relevant, identifying characteristics, i.e., structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus (see i)(C), above).**

The instant application does not describe sufficient description of a representative number of species by actual reduction to practice, reduction to drawings, or by disclosure of relevant, identifying characteristics, i.e., structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such

identifying characteristics, sufficient to show the applicant was in possession of the claimed genus.

Claims 17-19, 21-34 and 37-50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The nonenabled subject matter is the limitation, "a peel strength of 0.5 kgf/(5 mm x 5 mm chip)." To further clarify, the claimed peel strength expression in kgf/(mm^2 chip) is repugnant to the art accepted expression (see ASTM standard D 903-98) of mass to length, and the determination of the claimed measure of peel strength in kgf/(mm^2 chip) is not otherwise disclosed.

Claims 17-19, 21-34 and 37-50 are rejected under 35 U.S.C. 112, first paragraph, because the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

Specifically, the specification does not reasonably provide enablement for the claimed genus. The claimed genus is not enabled because the film is claimed in terms of the method of

making it coupled with its properties and functions, and there is no disclosed or otherwise known correlation or relationship between the properties and functions of the film genus and its composition or structure. To further clarify, although it is disclosed that particular film composition species have the claimed properties and functions, there is no disclosure that the claimed properties and functions define a particular film composition species or genus. In addition, the invention involves unpredictable chemical reactions, and absent a statement applicable to the genus as a whole, it is indeterminable from the disclosure of the particular species what other species will work; hence, it is indeterminable what other species are members of the genus. As a result, a person skilled in the art could not make the film genus as a whole without undue experimentation. Chemical reactivity is a most unpredictable and empirical art and it is well settled that the requirement that the claims be commensurate in scope with the enabling disclosure is particularly stringent in this area of technology. In re Doumani 126 USPQ 408, In re Grant 134 USPQ 248, In re Fisher 166 USPQ 18, Mobil Oil Corporation v. W. R. Grace and Company 180 USPQ 418, In re Slocombe 184 USPQ 740, In re Mercier 185 USPQ 774, Corona Cord Tire Company v. Dovan

Chemical Corporation 192 CD 255, See In re Hawkins 174 USPQ 157 (pg. 163) reasoning is sufficient, evidence is not required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17-19, 21-34 and 37-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 17 and 30 the limitation, "a peel strength of 0.5 kgf/(5 mm x 5 mm chip)" is incorrect and the scope of the limitation cannot be determined because peel strength is a measure of mass to length, and the claimed peel strength of mass-force to area (kgf/mm^2) is a measure of pressure. Furthermore, there is no conversion factor between the measures.

In claim 17 the scope of the limitation, "An organic die bonding film having a peel strength of 0.5 kgf/(5 mm x 5 mm chip) or higher" is indeterminable, and the limitation appears to be erroneous because peel strength is a characteristic of the adhesive bond of plural materials and not a property of a film; therefore, the film cannot have a peel strength. See ASTM standard D 903-98.

In claim 30 the scope of the limitation, "An organic die bonding film having," "a peel strength of 0.5 kgf/(5 mm x 5 mm chip) or higher" is indeterminable, and the limitation appears to be erroneous because peel strength is a characteristic of the adhesive bond of plural materials and not a property of a film; therefore, the film cannot have a peel strength.

In the rejections infra, reference labels are generally recited only for the first recitation of identical claim language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that

was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 17-19, 21-34, 37, 38 and 45-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita (5406124).

At column 3, line 63 to column 4, line 35; column 7, lines 6-9; column 8, lines 1-8 and 24-47; column 9, lines 14-35; column 10, lines 14-15; column 14, lines 3-14 and 40-46; column 16, lines 18-34; column 17, lines 13-14; and column 18, lines 1-10 and 29-30, Morita teaches the following:

An organic die-bonding film 42 having a peel strength of 67g/10mm^2 chip when a semiconductor 1 has been bonded to a support member 2 with said film under conditions of 250°C-450°C temperature and pressure of 0.1-30 gf/mm^2, wherein said film comprises an organic material selected from the group consisting of epoxy resin, silicone resin, acrylic resin, and polyimide resin, wherein the film has a modulus of elasticity of 10 Mpa or less at a temperature of 250°C, having a water absorption of 1.5% by volume or less, having a residual volatile component in an amount of not more than 3.0% by weight, having a saturation moisture absorption of 1.0% by volume or less, having a void volume of 10% or less in terms of voids present in the material

and at an interface between said material and a support member at a stage where a semiconductor had been bonded to a support member by said material, wherein the film is a self-supporting film, wherein the film has a single layer structure, wherein said film comprises a polyimide resin, wherein said material is an organic material comprising an epoxy resin, the film further comprising a metal filler, and the film made by a process comprising the steps of coating a varnish on a carrier film and peeling the die bonding film from said carrier film.

An organic die-bonding single layer film 42 having the property of bonding a semiconductor chip to a support member under conditions of 250°C-450°C temperature and pressure of 0.1-30 gf/mm^2, and having a modulus of elasticity of 10 MPa or less at a temperature of 250°C, having a saturation moisture absorption of 1.0% by volume or less, having a residual volatile component in an amount of not more than 3.0% by weight, having a water absorption of 1.5% by volume or less, and wherein the film comprises an organic material selected from the group consisting of epoxy resin, silicone resin, acrylic resin, and polyimide resin.

An organic die-bonding film having the property of bonding a semiconductor chip to a support member under conditions of 250°C temperature and pressure of 0.1-30 gf/mm^2, wherein the film

has a water absorption of 1.5% by volume or less, a saturation moisture absorption of 1.0% by volume or less, a modulus of elasticity of 10 MPa or less at a temperature of 250°C, a void volume of 10% or less in terms of voids present in the film and at an interface between said film and a support member at a stage where a semiconductor has been bonded to a support member by said film, a peel strength of 67g/10mm^2 chip at a stage where a semiconductor has been bonded to a support member with said film, and a residual volatile component in an amount of not more than 3.0% by weight, wherein the film comprises an organic material selected from the group consisting of epoxy resin, silicone resin, acrylic resin, and polyimide resin, wherein the film is a self-supporting film, wherein the film has a single layer structure, wherein said film comprising a polyimide resin, wherein said film further comprises an epoxy resin, the film further comprising a metal filler, the film made by a process comprising the steps of coating a varnish on a carrier film and peeling the die bonding material from said carrier film.

To further clarify the teaching of a water absorption of 1.5% by volume or less, the teaching of Morita of "less than 1.2%" anticipates this limitation. In particular, although Morita does not appear to explicitly specify whether the measure is by volume or by weight, both specific values of 1.2% by

volume and 1.2% by weight fall within the claimed range of 1.5% by volume or less. Moreover, both ranges of 1.2% by volume or less and 1.2% by weight or less fall within the claimed range because a common lower limit of the ranges is equal to zero percent.

In any case, Morita teaches that percent water absorption is a result-effective variable, and specifically, that minimal water absorption is desirable. Therefore, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose the particular claimed percent water absorption because applicant has not disclosed that the limitation is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical, and it appears prima facie that the process would possess utility using another water absorption. Indeed, it has been held that optimization of range limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See MPEP 2144.05(II): "Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or

temperature is critical. '[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.'" In re Aller, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955). See also In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969), Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989), and In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990). As set forth in MPEP 2144.05(III), "Applicant can rebut a prima facie case of obviousness based on overlapping ranges by showing the criticality of the claimed range. 'The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.' In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02 - § 716.02(g) for a discussion of criticality and unexpected results."

To further clarify the teaching of a void volume of 10% or less in terms of voids present in the material, as cited, Morita teaches a void volume of 0%: "This can prevent . . . the

volatilization of moisture produced . . . from producing void in the adhesive layer."

In any case, Morita teaches that void volume is a result-effective variable, and specifically, that minimal void volume is desirable. Therefore, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose the particular claimed void volume limitation because applicant has not disclosed that the limitation is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical, and it appears prima facie that the process would possess utility using another void volume.

Although Morita teaches a film having a peel strength, Morita does not appear to literally teach that the film has a peel strength of 0.5 kgf/(5 mm x 5 mm chip) or higher. Furthermore, it is indeterminable if the largest explicitly taught peel strength of Morita; namely a peel strength of 67g/10mm^2 chip, is equivalent to the claimed peel strength of 0.5 kgf/(5 mm x 5 mm chip) or higher because there is no conversion factor between the two different peel strength expressions. Nonetheless, as cited, Morita teaches that an increase in peel strength is desirable, and it would have been an obvious matter of design choice bounded by well known manufacturing constraints

and ascertainable by routine experimentation and optimization to choose the particular claimed peel strength range because applicant has not disclosed that the range is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical, and it appears prima facie that the product and process would possess utility using another range.

Also, Morita does not appear to explicitly teach bonding under conditions of 100°C-230°C temperature. Regardless, Morita teaches that bonding temperature is a result-effective variable. Moreover, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose the particular claimed bonding temperature limitation because applicant has not disclosed that the limitations is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical, and it appears prima facie that the invention would possess utility using another temperature.

To further clarify the teaching that the film is a self-supporting film, this is an inherent property of the film because the film is inherently characterized by self-support and capable of supporting itself or its own weight. As illustrated in Figure 3, the free upper film 42 portion is self-supported (held up) by itself. In the interest of compact prosecution, it

is noted that self-support does not preclude additional support as in the manner of a self-supporting wall.

Although Morita does not appear to explicitly teach the process limitations, "a film made by a process comprising the steps of coating a varnish on a carrier film and peeling the die bonding film from said carrier film," the film of Morita inherently possesses the structural characteristics imparted by the process limitation. See In re Fitzgerald, Sanders, and Bagheri, 205 USPQ 594 (CCPA 1980).

Claims 31, 32, 40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita as applied to claims 17-19, 21-34, 37, 38 and 45-50 supra, and further in combination with Berger (4681928).

As cited, Morita teaches the process limitation that the polyimide is synthesized from 4,4'-diaminodiphenyl ether and 2,2-bis[4-(4-aminophenoxy)phenyl] propane. However, Morita does not appear to explicitly teach the process limitation that the polyimide is synthesized from 1,2-(ethylene)bis(trimellitate anhydride).

Nevertheless, as cited, Morita teaches that the polyimide is synthesized from 4,4'-diaminodiphenyl ether and 2,2-bis[4-(4-aminophenoxy)phenyl] propane in combination with a dianhydride, and at column 4, line 54; column 6, lines 21-63; column 11,

lines 26, 27 and 43; column 13, line 1 to column 18, line 2; and column 12, line 22, Berger teaches a polyimide synthesized from 4,4'-diaminodiphenyl ether and 2,2-bis[4-(4-aminophenoxy)phenyl] propane in combination with the dianhydride 1,2-(ethylene)bis(trimellitate anhydride). Moreover, it would have been obvious to use for its intended purpose the dianhydride 1,2-(ethylene)bis(trimellitate anhydride) of Berger as the dianhydride of the process of Morita because it would provide the dianhydride of Morita. Furthermore, Berger teaches that 1,2-(ethylene)bis(trimellitate anhydride) is a functional equivalent of numerous of the dianhydrides explicitly taught by Morita such as 3,3',4,4'-benzophenotetracarboxylic dianhydride.

Also, although Morita does not appear to literally teach that the film is a self-supporting film, as cited, Berger teaches that the film is "unsupported." In addition, it would have been obvious to use an unsupported film as taught by Berger as the film of Morita because, as taught by Berger, it would be useful in unsupported applications.

Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morita applied to claim 37, and further in combination with Berger(4681928) and Jackson (4965331).

Berger is applied for the same reason it was applied to claims 40 and 42.

Morita and Berger do not appear to explicitly teach the process limitation that the polyimide is synthesized from bis(4-amino-3,5-dimethylphenyl)methane.

Nevertheless, as cited, both Morita and Berger teach a polyimide synthesized from aromatic diamines, and at column 2, lines 41-59, Jackson teaches a polyimide synthesized from the aromatic diamine bis(4-amino-3,5-dimethylphenyl)methane. In addition, it would have been obvious to use for its intended purpose the aromatic diamine bis(4-amino-3,5-dimethylphenyl)methane of Jackson as the aromatic diamine of the process of Morita and Berger because it would provide the aromatic diamine of Morita and Berger. Furthermore, Jackson teaches that bis(4-amino-3,5-dimethylphenyl)methane is a functional equivalent of numerous of the aromatic diamines explicitly taught by both Morita and Berger such as m-phenylenediamine.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morita and Berger as applied to claim 37, and further in combination with Baumann (5296567).

Berger is applied for the same reason it was applied to claims 40 and 42.

Morita and Berger do not appear to explicitly teach that the polyimide is synthesized from bis(4-amino-3,5-diisopropylphenyl)methane.

Still, as cited, Morita teaches an aromatic diamine, and at column 5, lines 1-5, Baumann teaches a polyimide synthesized from the aromatic diamine bis(4-amino-3,5-diisopropylphenyl)methane. In addition, it would have been obvious to use for its intended purpose the aromatic diamine bis(4-amino-3,5-diisopropylphenyl)methane of Baumann as the aromatic diamine of Morita and Berger because it would provide the aromatic diamine of Morita and Berger.

Applicant's amendment and remarks filed 6-30-3 have been fully considered and are addressed supra and infra.

Applicant's statement that it is conceded "that claims 39-44 comply with § 112" is respectfully traversed because this concession is not of record.

Also, applicant requests clarification for the MPEP teaching that the declaration must refer to individual claims. To this end, applicant is again directed to MPEP 716, and further directed to form paragraph 7.66.03 recited therein.

Applicant also requests clarification of the previous office action reference to "the closest prior art of Morita."

It is submitted that the closest prior art of Morita is recited in the rejection of the claims, and comprises that for which Morita is relied on in the rejection of the claims.

Relatedly, applicant complains that "it makes no sense to compare the invention to the invention." However, as applied to the rejection, the closest prior art of Morita is not applied to anticipate the instant claimed invention, and there is no requirement in the record that applicant compare the invention to the invention.

Applicant also asserts, "The courts have held that there is no requirement for the unexpected results relied upon for patentability to be recited in the claims so long as the features responsible for the unexpected results are recited in the claims. In re Merchant, 197 USPQ 785, 788 (CCPA 1978). In the present case, the properties of the film are the 'features' of the film responsible for the unexpected results. Specifically, the organic die-bonding film made in accordance the organic die-bonding film made in accordance with the present invention must have the property of bonding under the conditions of 100-230°C temperature and pressure of 0.1-30 gf/mm^2 and must comprise an organic material selected from the group consisting of epoxy resin, silicone resin, acrylic resin and polyimide resin as recited in independent claims 17, 19 and 30."

Therefore, it is respectfully submitted that applicant admits that the features responsible for the unexpected results must be recited in the claims. Furthermore, because applicant argues that the claimed invention must comprise an organic material selected from the group consisting of epoxy resin, silicone resin, acrylic resin and polyimide resin, and must have the property of bonding under the conditions of 100-230°C temperature and pressure of 0.1-30 gf/mm^2, applicant argues that these are critical limitations. However, this argument is respectfully traversed because the criticality of these limitations was not originally disclosed. Indeed, applicant originally disclosed and presently discloses (see for example the instant abstract) and claimed (see for example original claims filed in application 08/981,702 and original claims 1-16 of the instant application) numerous embodiments of the invention not limited to the allegedly critical limitation. In fact, the instant claims were amended to include the allegedly critical limitation only after numerous office actions rejecting the claims and the filing of several continuing applications, and as indicated in MPEP 2164.089(c), "Broad language in the disclosure, including the abstract, omitting an allegedly critical feature, tends to rebut the argument of criticality."

Further, applicant traverses the statement that "the claimed result cannot be declared unexpected in relation to peel strength of Morita when the relationship between the peel strength of Morita cannot be determined." Specifically, applicant argues that the comparison set forth in the Declaration proves that the resulting peel strength of the invention is unexpected compared to the peel strength of Morita. This argument is respectfully traversed because, as applied to the rejection, the prior ort of Morita closest to the claimed peel strength includes a peel strength of $67g/10mm^2$ chip, and applicant has failed to compare the closest prior art of Morita with the instant invention.

Additionally, applicant alleges that Morita's explicit statement of unexpected results is "mere puffery," and is unsupported by facts. In response, it is respectfully noted that MPEP 1701 admonishes: "Every patent is presumed to be valid, 35 U.S.C. 282, first sentence. Public policy demands that every employee of the Patent and Trademark Office refuse to express to any person any opinion as to the validity or invalidity of, or the patentability or unpatentability of any claim in any U.S. patent."

Also, applicant asserts that that "the Examiner was unable to point out any defect in Applicants' drawings even though

Applicants' attorney asked Examiner Graybill at the Examiner's Interview to point out the alleged defects in the drawings," and, "Applicants' attorney asked Examiner Graybill to point out what in the prior art was closer than Example 1 of the Morita et al. reference. Examiner Graybill was unable to do so." It is respectfully submitted that this is a mischaracterization. More accurately, the information requested during the interview was not readily available within the constraints of the interview format.

In addition, throughout the remarks, applicant refers to a 17 degree peel strength of the instant invention. However, it is respectfully submitted that the claims are not so limited, and there is no original disclosure of a 17 degree peel strength.

The remaining arguments have been adequately addressed in the record.

The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited because it is directed to peel strength.

This Office action has an attached requirement for information under 37 CFR 1.105. A complete reply to this Office action must include a complete reply to the attached requirement for information. The time period for reply to the attached

requirement coincides with the time period for reply to this Office action.

Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Customer Service whose telephone number is 703-306-3329.

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is (703) 872-9306.

David E. Graybill
Primary Examiner
Art Unit 2827

D.G.
2-Oct-03

No prior art has been discovered that discloses the claimed composition 1,10-(decamethylene)bis(trimellitate anhydride).

Therefore, applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that is reasonably necessary to the examination of this application.

In response to this requirement, please confirm that the chemical nomenclature 1,10-(decamethylene)bis(trimellitate anhydride) is correct.

In response to this requirement, please provide a list of synonyms and keywords that are particularly helpful in locating publications disclosing 1,10-(decamethylene)bis(trimellitate anhydride).

In response to this requirement, please provide the title, citation and copy of each publication that any of the applicants relied upon to develop the disclosed subject matter that describes the applicant's invention, particularly as relating to 1,10-(decamethylene)bis(trimellitate anhydride). For each publication, please provide a concise explanation of the reliance placed on that publication in the development of the disclosed subject matter.

In response to this requirement, please provide the title, citation and copy of each publication that any of the applicants

relied upon to draft the claims 43 and 44 subject matter relating to 1,10-(decamethylene)bis(trimellitate anhydride). For each publication, please provide a concise explanation of the reliance placed on that publication in distinguishing the claimed subject matter from the prior art.

In response to this requirement, please state whether any search of prior art was performed relating to 1,10-(decamethylene)bis(trimellitate anhydride). If a search was performed, please state the citation for each prior art collection searched. If any art retrieved from the search was considered material to demonstrating the knowledge of a person having ordinary skill in the art to the disclosure of 1,10-(decamethylene)bis(trimellitate anhydride), please provide the citation for each piece of art considered and a copy of the art.

The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete reply to the requirement for that item.

This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period

for reply to this requirement coincides with the time period for reply to the enclosed Office action.

Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Customer Service whose telephone number is 703-306-3329.

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is (703) 872-9306.

David E. Graybill
Primary Examiner
Art Unit 2827

D.G.
2-Oct-03